

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

To:

see form PCT/ISA/220

Date of mailing
(day/month/year) see form PCT/ISA/210 (page 2)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION

See paragraph 2 below

International application No.
PCT/EP2004/052180

International filing date (day/month/year)
9/15/2004

Priority date (day/month/year)
9/26/2003

International Patent Classification (IPC) or both national classification and IPC
H01F38/12, H01F41/06

Applicant
Robert Bosch GMBH

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2004/052180

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in the international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/EP2004/052180

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1 - 13	YES
	Claims		NO
Inventive step (IS)	Claims	1 - 13	YES
	Claims		NO
Industrial applicability (IA)	Claims	1 - 13	YES
	Claims		NO

2. Citations and explanations:

see supplementary page

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International File No. PCT/EP2004/052180

Re.: Point V

- 1 In the present opinion reference is made to the following documents:

D1: US 5 692 483 A (WADA ET AL) December 2, 1997 (1997-12-02)

- 2 Document D1 is considered the most proximate related art. It discloses (Claims 1 and 15, Figure 7):

"Ignition coil for a gasoline engine including a coil core on which at least one winding layer of a primary winding is wound up, on which in turn at least one winding layer of a secondary winding is wound up."

from which the object of the independent Claim 1 differs in that:

"at least one winding layer of a shield winding is situated between the at least one winding layer of the primary winding and the at least one winding layer of the secondary winding."

- 2.1 The object of Claim 1 is therefore novel (Article 33 (2) PCT).

The object to be achieved by the present invention may thus be viewed in that the use of the necessary interference suppression components, known from practice, is reduced.

- 2.2 The achievement of the object proposed in Claim 1 of the present application is based on inventive step (Article

33 (3) PCT) for the following reasons: the shield winding ensures efficient interference suppression.

2.3 Claims 2, 3 are dependent on Claim 1 and therefore also fulfill the requirements of the PCT with regard to novelty and inventive step.

3 **For the same reasons**, Claims 4 through 7 also fulfill the requirements of the PCT with regard to novelty and inventive step.

4 Document 1 discloses (column 8, line 40 through column 9, line 32):

"A method for manufacturing an ignition coil for a gasoline engine including the following method steps:

- winding up a first winding layer of an electrically conducting, insulated wire on a coil core in a first winding direction or on a separate coil winding with at least one winding layer,
- winding up at least one further winding layer of the wire on the first winding layer underneath it in a second winding direction opposite the winding direction of the winding layer underneath."

from which the object of the independent Claim 8 differs in that:

"the method furthermore includes the following method steps:

- separating the wire at the start of the top winding layer for forming two free wire ends of the top winding layer,

- "winding up a coil winding, separated from the existing winding layers, with at least one winding layer."

4.1 The object of Claim 8 is therefore novel (Article 33 (2) PCT).

The object to be achieved by the present invention may thus be viewed in that an ignition coil may be manufactured which includes an efficient shield winding.

4.2 The achievement of the object proposed in Claim 8 of the present application is based on inventive step (Article 33 (3) PCT) for the following reasons: the method step "separating..." creates a shield winding.

4.3 **For the same reasons**, Claim 9 also fulfills the requirements of the PCT with regard to novelty and inventive step.

4.4 Claims 10 through 13 are dependent on Claim 8 or 9 and therefore also fulfill the requirements of the PCT with regard to novelty and inventive step.